

REMARKS

Claim Rejections Under 35 USC §102 and 35 USC §103

Claims 41, 44-47, 50 and 53 have been rejected under 35 USC §102(e) as being anticipated by Nakata et al. (U.S. Patent No. 5,945,834).

Claims 42, 43, 48, 49 and 54-57 have been rejected under 35 USC §103(a) as being unpatentable over Nakata et al. (U.S. Patent No. 5,945,834) in view of Soejima et al. (U.S. Patent No. 6,114,864).

Claims 58-60 have been rejected under 35 USC §103(a) as being unpatentable over Nakata et al. (U.S. Patent No. 5,945,834) in view of Igarashi et al. (U.S. Patent No. 5,894,217).

The rejections under 35 USC §102 and 35 USC §103 are traversed for the reasons to follow.

Objection to Drawings

The drawings have been objected to because the test handler of claims 58-60 is not shown. This objection is traversed as the test handler 14 is shown in Figures 2A and 3A.

Summary of the Invention

Claims 41-60 are directed to a contact system 16A (Figure 3A) for a semiconductor component 10A (Figure 3A) having a plurality of terminal contacts 12A (Figure 3A). The contact system 16A includes a board 18A (Figure 3A) comprising a plurality of contacts 20A (Figure 3A) in electrical communication with external circuitry 22A (Figure 3A). The contact system 16A also includes a substrate 26A (Figure 3D) on the board 18A (Figure 3D) comprising a plurality of flexible segments 54A (Figure 3D), and a plurality of contactors 32A (Figure 3D) on the flexible segments 54A configured to simultaneously

electrically engage the contacts 20A on the board 18A and the terminal contacts 12A on the component 10A.

Each contactor 32A includes a first contact 34A (Figure 3D) configured to electrically engage a terminal contact 12A on the component 10A, and a conductive polymer layer 60 (Figure 3D) on the substrate 26A in electrical communication with the first contact 34A configured to electrically engage a contact 20A on the board 18A.

Argument

The claims have been amended to emphasize features, which in combination with other features of the present contact system, patentably distinguish the system from the prior art. One feature recited in amended independent claims 41, 47 and 54 is that the substrate 26A (Figure 3D) "slides" or "floats" on the board 18A (Figure 3A). Antecedent basis for these recitations is contained on page 4, line 5, and on page 10, line 30, of the specification. In Nakata et al. the board (wiring substrate 12), and the substrate (probe sheet 9), are fixedly attached to one another with a fixing screw 13 (column 17, lines 30-33 of Nakata et al.). The present sliding arrangement improves the performance of the contactors 32A because the entire substrate 26A can move to accommodate dimensional variations in the contacts 20A on the board 18A. As held in Graham v. John Deere, 383 U.S. 1, 13, 148 U.S.P.Q. 459, 465 (1966), the results and advantages of an invention over the prior art are to be considered in assessing unobviousness.

Another feature of the present contact system recited in the amended independent claims is that the contactors 32A are formed on flexible segments 54A (Figure 3D) of the substrate 26A, which are free to move independently of one another. Antecedent basis for this recitation is contained on page 13, line 21 of the specification. This feature helps to compensate for variations in the height and

planarity of the terminal contacts 12A on the component 10A. Although Soejima et al. discloses contact bumps 16 on a substrate 11 with slits 21 therebetween, this arrangement has not heretofore been used in combination with a conductive polymer layer 60 (Figure 3D) on a floating substrate 26A. In addition, one skilled in the art at the time of the invention would have no incentive to put slits in the probe sheet 9 of Nakata et al., as taught by Soejima et al., because it's made of polyimide (column 17, lines 23-24 of Nakata et al.), which is already a flexible material.

Another feature of the present contact system recited in independent claim 58 is it's use in combination with a test handler. Although test handlers are well known in the art, as exemplified by Igarashi et al., they have not heretofore been used in combination with contactors 32A having the presently claimed configuration. In addition, test handlers are typically used to test singulated components such as packages (column 1, lines 26-30 of Igarashi et al.), whereas Nakata et al. is directed to a system for testing components on a wafer (column 1, lines 44-46 of Nakata et al.). Accordingly, one skilled in the art at the time of the invention would have no incentive to combine the test handler of Igarashi et al. with the wafer test system of Nakata et al.

Conclusion

In view of the above arguments and amendments, favorable consideration and allowance of claims 41-50 and 53-60 is respectfully requested. In addition, rejoinder of withdrawn dependent claims 51 and 52 is requested. An IDS is being filed concurrently with this Amendment. Should any issues arise that will advance this case to allowance, the Examiner is asked to contact the undersigned by telephone.

DATED this 22nd day of September, 2003.

Respectfully submitted:



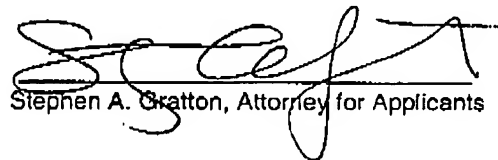
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